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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,822	10/26/2001	Jeremy Barker	VT-2230CPA	5043

33204 7590 09/30/2003
VALENCE TECHNOLOGY, INC.
301 CONESTOGA WAY
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EXAMINER

CHANEY, CAROL DIANE

ART UNIT PAPER NUMBER

1745

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,822

Applicant(s)

BARKER ET AL.

Examiner

Carol Chaney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 120-180 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 120,121,123-126,128-138,142-150,152-155,157 and 160 is/are rejected.
- 7) ☒ Claim(s) 122,127,139-141,151,156,158,159 and 161-180 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) Z. 6) ☐ Other: _____

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Election/Restrictions

In response to examiners' telephonic request for an election of species in this case, applicants have cancelled claims 1-119 and submitted claims 120-180 for examination. Claims 120-180 have been examined, and are directed to batteries and electrode active materials based upon the "NASICON" structure, having one or a combination of silicate anions (SiO_4^{-4}) and phosphate anions (PO_3^{-3}).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 120, 121, 123-126, 128, 129, 130, 131, 142-146, 149, 150, 152-155, 157, 160, are rejected under 35 U.S.C. 102(b) as being anticipated by Shackle, US Patent 5,721,070.

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Shackle discloses electrode active cathode materials used in lithium nonaqueous batteries. The battery compositions are represented by the formula



where 'M' is an alkali metal ion

'T' is a metal ion capable of existing in more than one stable oxidation state selected from Mn, Ni, Fe, V, Ti, Co, Cu, Cr, Sn, Pb, W, and Mo.

'A' is a multi-element anion with a charge greater than 1.0 and selected from SiO_4 , TiO_4 , VO_4 , FeO_4 , MnO_4 , and PO_4 . (See column 3 line 61-column 4 line 36.)

'x' is between 1 and 20, 'y' is between 1 and 4, and z is from 1 to about 7. (See column 8, lines 19-23.)

In addition, in some embodiments, further anions are added into the electrode active material compound to alter electrical conductivity. Typical added anions include F^- and OH^- . (See column 4, line 63-column 5, line 3.) Lithium metal phosphates or silicates having hydroxide or fluoride anions are disclosed by Shackle as electroactive cathode materials, and batteries using the materials are taught by Shackle. (Column 5, lines 19-30.)

Claims 120, 121, 123, 125, 126, 128, 129, 131-138, 142, and 144-148 are rejected under 35 U.S.C. 102(b) as being anticipated by Rinaldi, "The crystal structure of graphite, complex phosphate not a garnetoid", *Bulletin de Mineralogie* (1978) **101**(5-6), 543-7.

The generic empirical formula for griphite is given as

$\text{Ca}(\text{Mn, Na, Li})_6\text{FeAl}_2(\text{PO}_4)_6(\text{F,OH})_2$ See:

<http://www.webmineral.com/data/Griphite.shtml>

This formula can be written alternatively in the format $\text{A}_a\text{M}_b(\text{PO}_4)_3\text{Z}_d$ as

$(\text{Mn, Na, Li})_3\{\text{Fe}_{0.5}\text{Ca}_{0.5}\text{Al}\}(\text{PO}_4)_3(\text{F,OH})$ where

'A' is Mn, Na, Li and comprises alkali metals,

'M' is Fe, Ca, and Al or M' is Fe and M" is Ca and Al,

Z is F and OH.

The recitation of the adjective "electrode active" in the preambles of applicants' claims is not given patentable weight. The materials described by the prior art and the applicant are essentially the same; the terms used to describe the materials do not distinguish the materials.

Allowable Subject Matter

Claims 122,127,139-141,151,156,158,159 and 161-180 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claims 122, 127, 151, 156, and 158 the stoichiometry claimed by the applicants is not suggested by the prior art. With regards to claims 139-141 and 159, compounds having a mixture of silicate and phosphate anions is not clearly

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suggested by the prior art. With regards to claims 161-180, batteries as claimed are not suggested by the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Mon - Fri 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 703-308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Carol Chaney
Primary Examiner
Art Unit 1745

cc